

Fig. 1

-9 cggtaagaatggtgtattttaaatttcatgtcaataaccaatgtcccggtgctgaag
 M V Y F L N F M S I T N V P V L K
 52 cgcgcgcactctacatggcgacgaatccggctgggtgttcttgcgtctg
 R A R L Y M A T N R R L V V V L V V L L
 112 tactgggtggtccagaacgtttggacgtggagccctgggacgcgcgatttggcccaagtg
 Y W V V Q N V W T W S P G T R D L A Q V
 172 gacgcgaagatcgaggccgagactaaactcgaaatctacataactttggagcgcatttgcgc
 D A K I E A E L N S N L H T F G A H L R
 232 cacttaaccggctccggcagagtccggcaccctgcgtgaaaactcaccttctattt
 H L N R L P A E S A T L R E K L T F Y F
 282 ccatattatcctgaaaagcccgccgaaaccagatctggcagacatggaaaggctgatctc
 P Y Y P E K P V P N Q I W Q T W K V D L
 352 gaagacgacaacttcccaagcagtgacagacggttcagaagacgtggcggagaaaaat
 E D D N F P K Q Y R R F Q K T W V E K N
 412 ccagactacgtgtaccacctgattccggactctgtgattgaggacttgcgtggcagtttg
 P D Y V Y H L I P D S V I E D F V A S L
 472 tacgcgaacgtgcccggaggtggtcagagcttgcgtttccgaaaaatcatgaaag
 Y A N V P E V V R A Y Q L L P K N I M K
 532 gcggttttccggattttgtatctacgacgcggaggcacctactcagacatggac
 A D F F R Y L V I Y A R G G T Y S **D M D**
 592 acgggtgtttaaagccgatcaaggactggccacggttgcgtccacgttccacgct
 T V C L K P I K D W A T F D R D L I H A
 652 gccgacaataaggccgatctcccaagatagatccagaagcaagaaccacgcgtgggg
 A D N K A D L S Q I D P E A R T T P V G
 712 ctgggtattggcattgaggccgacccggacaggccgactggcacgactgggttctgcgc
 L V I G I E A D P D R P D W H E W F S R
 772 agactgcagttctgccagtgacatccaggcgaagccgggacacccgtgtgcgcag
 R L Q F C Q W T I Q A K P G H P L L R E
 832 ctgatcatccggatctggaggagacgttccgaaacagcacatggcgtttgaaaaga
 L I I R I V E E T F R K Q H M G V L K R
 892 gtggaggcaaggactcggcgcagatcatgcagtggacaggaccggggatattaca
 V E G K D S G A D I M Q W T G P G I F T
 952 gacactctgttattatctgaaatgtggcgacgcggcaagttggcgcacgggtac
 D T L F D Y L N N V A S D G K L G D G Y
 1012 ggcgtgggtcggttattggcgcaagcacggcaaatataagctgaaaaagacagaaaatt
 G V G S L Y W R K H G K Y K L K K T E I
 1072 aacaagaataacgagccattgcattctgaggaccagcttatcaactggaggctgcacc
 N K N N E P L H S E D Q L I N W R S L T
 1132 aacatggacaagccaaagatcatggggacgtaatgggttaccaatcacgagctttagt
 N M D K P K I M G D V M V L P I T S F S
 1192 ccgaacgtggggcacatggctcaaagagcagctcagataggctggcatttggaggcat
 P N V G H M G S K S S S D R L A F V E H
 1252 ttatctggcagctggaaaggaaaaacaaataggaaaaataataattagctgcatt
 L F S G S W K P K N K
 1312 tttagataattctcatgagcaggcacagaacg

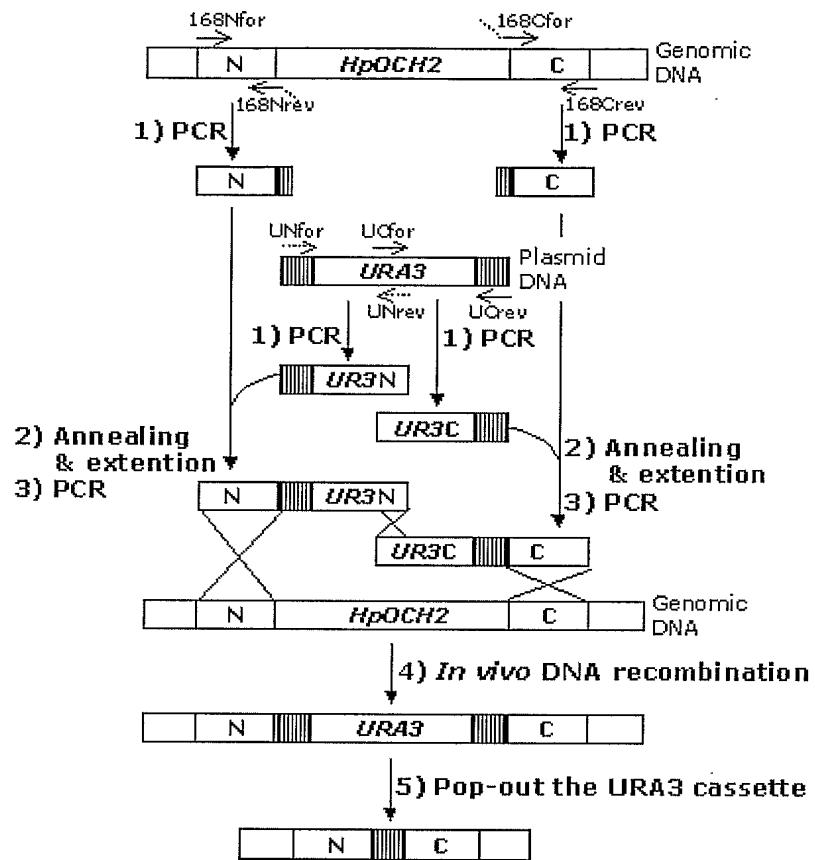
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Fig. 2

| | | |
|---------|-------|--|
| Hp0ch2p | 1 | -----MIVYFLNFMSITNVPVLKPARFYMATNRRRLVWWFLW-----YWW |
| Hp0chlp | 1 | -----MSKASPYRGINSSTSSTSPKFRLSDEFLCLL----- |
| Ca0chlp | 1 | -----MLQLREPQMVHKHEKLAULGCIWVIFTTYMISS----- |
| Pp0chlp | 1 | -----MAKADGILLYYINPHEIPPRRYYYFVAFAT----- |
| Sc0chlp | 1 | -----MSRKLSHLIALTRSKTLIWVWVYSLI----- |
| Sp0chlp | 1 | -----MLRLRLRSIVIGAAIAGSILLFNHGSIKGMEDELTIESMLKDYQPEAAAKDYVGQQEEEDYDQP----- |
| Hp0ch2p | 42 | QWWTWSPGTIDLAQVDAKIDAEIN-----SNLHTFGAFLR-----HLNRLPAESATLRLGILDNYFPP |
| Hp0chlp | 32 | GLMLFRFSTSWSLINTEDKIVSYIN-----NFYKLNPFFRG-----ANPYDAAVTAAEFLAKFPPY |
| Ca0chlp | 35 | SSPTSTHKT EYNSPKLQMAKELAEIN-----SNWKEGLLNFQP-----NKKYSLFDESTLPQCL-----QFPPY |
| Pp0chlp | 30 | EVICVLYGPSSQISSLSPKSDYPLT-----PSLSDLKLTLEAP-----SOLSPGTVEDMLRPLCERHPPY |
| Sc0chlp | 29 | FHLSNKRLLSFYPSKDDFKQTLPLTTSHSQDMLKQI-----TVNKKKQLHMLRQSL-----AAPPY |
| Sp0chlp | 67 | YMEKEEEDPDLEATYLSDMEERLEHSLEELDEENNYELHLRYSFSQLQDFDEENRAVHMWPD-----FEPFV |
| Hp0ch2p | 100 | Y-PEPPIPQDQIWWTQKIDLEDDNFYQKQDQWV-----EMLPDIYVYHLPDSDVIEDFVASLMAN-----WPEVW |
| Hp0chlp | 87 | DWSAIPRERKSIIWQWQKWPSTDFPPIKELVWIKQKWE-----NPYTKYMLTDPDEILBMLTRIIRKDT-----WPEVW |
| Ca0chlp | 94 | D-ESLIPFPRKIIWQWTQKWCIDBKSFPIRPLKMQQW-----DMLPDPYKHYVSPDKQCDLMLEQLYSQ-----WPEVW |
| Pp0chlp | 88 | R-SYEEFEPQHIIWQWTQKWSPSDSSFPWMLDLCG-----UL-QESPOYDFWVSPDDAANE-----WPEVW |
| Sc0chlp | 91 | D-SOAPLEORWQWTQKWCADDMLPFPSSQWNTQKWSGTSYSPDYOYSLISDDSIIPENLWAP-----WPEVW |
| Sp0chlp | 137 | P-YHADIPKLIWQTSKDP-----HDEWVMP-----TRFWR-----INHPSYSHEAEDDEQSKAHEMISSNGDSSSKSIS----- |
| Hp0ch2p | 166 | RAYQLLPKMIIKADFFFRYIYIARCGTYEDMDTMLKPKIKDWAFLFDRD-----IHAADNK-----ADLSQI |
| Hp0chlp | 153 | DAEELIPMNRISDPEFRYIYIARCGTYADMDTMLKPKMTWFDSDPMLG-----F----- |
| Ca0chlp | 160 | RAYRIPKSKILKADEFKYLILFARCGTYEDMDTMLKPKI-----EWVNSMELERKRN----- |
| Pp0chlp | 154 | DAEMLLPPEMLPKADFFFRYIYIARCGTYEDMDTMLKPKI-----EWVNSMELERKRN----- |
| Sc0chlp | 158 | CAEMLIPCAILKADEFKYLILFARCGTYEDMDTMLKPKI-----EWVNSMELERKRN----- |
| Sp0chlp | 200 | CAYPEMLPLPKADFFFRYIYIARCGTYEDMDTAPLKHINWWIPREYRKN----- |
| Hp0ch2p | 228 | DPEARTTPWGLWIGTEADEDREDWHLWQWRRPPIOFQWWTQAKPCHPLR-----LRELIIDWVDFI----- |
| Hp0chlp | 204 | -----WQWEDDWWVWEEMLTRRIQFEQWWTQAKPCHPLR-----LRELIIDWVDFI----- |
| Ca0chlp | 214 | -----RSGLWVGLIEADEDREDWHLWYARRIQFCQWWTQAKPCHPLR-----LRELIIDWVDFI----- |
| Pp0chlp | 208 | -----NAGLVIGIADEDREDWHLWYARRIQFCQWWTQAKPCHPLR-----LRELIIDWVDFI----- |
| Sc0chlp | 228 | SSDEIISHQFGLWIGIADEDREDWHSWYARRIQFCQWWTQAKPCHPLR-----LRELIIDWVDFI----- |
| Sp0chlp | 251 | -----IRBLWIGIADEDREDWHSWYARRIQFCQWWTQAKPCHPLR-----LRELIIDWVDFI----- |
| Hp0ch2p | 289 | -----HQEMGVLRLVECKDS-----GADLWQWTGPGIFTDT-----FVYNNIASD----- |
| Hp0chlp | 258 | -----DKLQWYRDFFGMDP-----CASWDLWQWTGPGIFTDT-----FVYNNIASD----- |
| Ca0chlp | 268 | -----HNGCQLEKVLGME-----GCDLWQWTGPGIFTDT-----FVYNNIASD----- |
| Pp0chlp | 262 | -----FESRYLWVMECKDR-----GSDLWQWTGPGIFTDT-----FVYNNIASD----- |
| Sc0chlp | 298 | SEMIIDPRFEEDYNVWYRHKPDEDTYRHSERLWQWVIGDGSIDWQWTGPGIFTDT-----FVYNNIASD----- |
| Sp0chlp | 304 | -----LHDSKLSKNCRS-----LNEWTGPGIFTDT-----FVYNNIASD----- |
| Hp0ch2p | 331 | -----CKGDGYCWCWSLYWRKHCKYKLKRTIEIJKMNEPLHSED-----QHIDWQWLSLMLDPRPQGCDVWV |
| Hp0chlp | 307 | -----DHQRDWAGELYC-----PETGECDDSWWFAFLRPAWVWDDPVWV |
| Ca0chlp | 310 | -----PEQFKNKKR-----W-----ATRQDQWLFTGQWQQLAADDVWV |
| Pp0chlp | 304 | -----CHSGQCIGACSSAYMALSLEERDALSLARPNGEMLKEKVPCKYAOQWQWQFQWPSRQDDEDDWV |
| Sc0chlp | 368 | -----LINPNWKNDEEGSESATTPARDWDNDTLLSKSTRKFYKISESLOSSNSWQWFWFVFLKEEVWDDPVWV----- |
| Sp0chlp | 341 | -----FSEVENTWNLRELYNGCDVWV----- |
| Hp0ch2p | 392 | -----PITSFSPWVQCMCWSSSDIAWVWHLFSCSWMKPKNK----- |
| Hp0chlp | 348 | -----PESRSPRDK-----KINNCGAYOYVWHTFCGGSIRWNGKEIKPQMEGYEGEDPNEVRLRKNWVKSDWV |
| Ca0chlp | 344 | -----PITSFSPDWWQMCAGEDSHDPMAYDQHMFSCSWMKDCHPPEEMO----- |
| Pp0chlp | 371 | -----PITSFSPDWCQCMCAQSSDDAELWVHMFSCSWMKEDADRNAGHK----- |
| Sc0chlp | 438 | -----PITSFSPDWWQCMCAQSSDDAELWVHMFSCSWMKEDADRNAGHK----- |
| Sp0chlp | 362 | -----PITTSFSPDWWQCMCAQSSDDAELWVHMFSCSWMKEDADRNAGHK----- |
| Hp0ch2p | 413 | GESKDVAPEVKLAKRCAYPYTPY 100% |
| Hp0chlp | 413 | GESKDVAPEVKLAKRCAYPYTPY 27.3% |
| Ca0chlp | ----- | 42.3% |
| Pp0chlp | ----- | 40.0% |
| Sc0chlp | ----- | 40.4% |
| Sp0chlp | ----- | 30.8% |

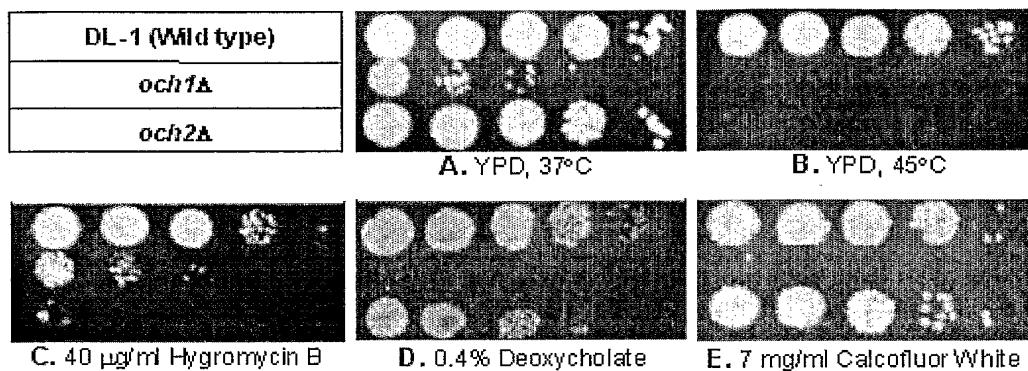
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Fig. 3



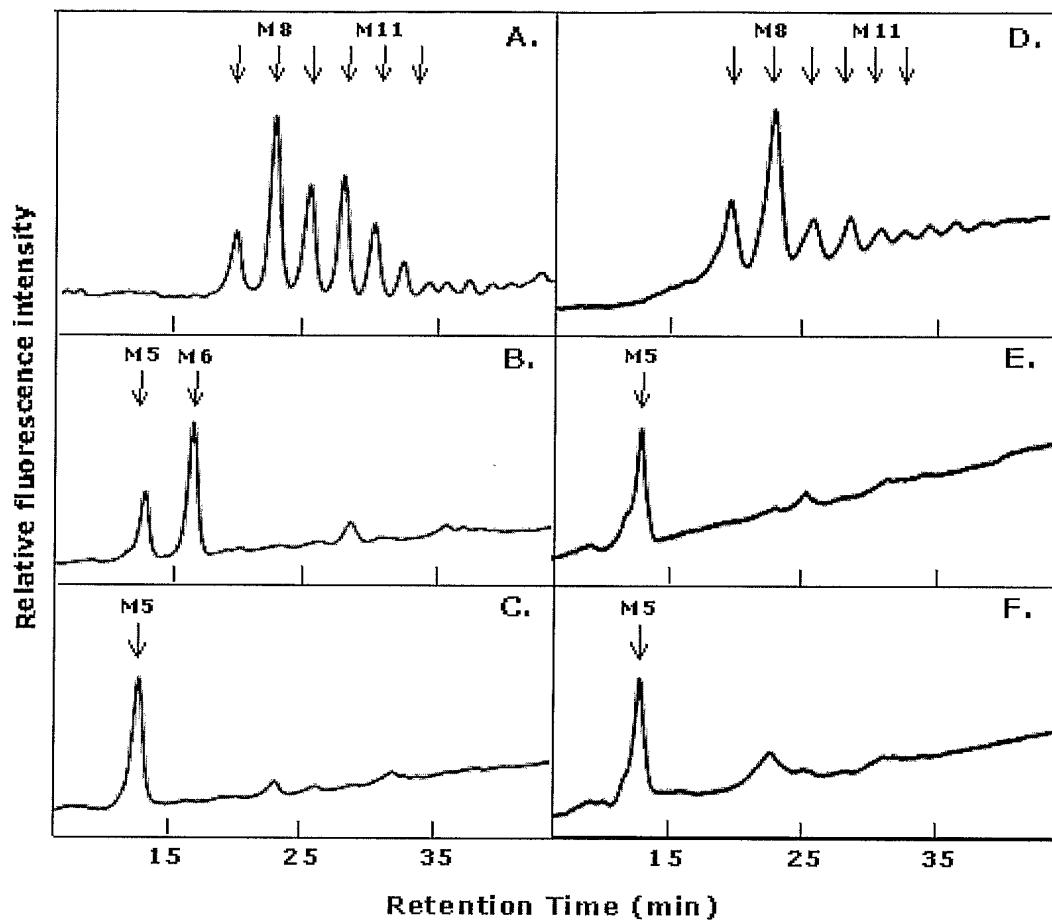
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Fig. 4



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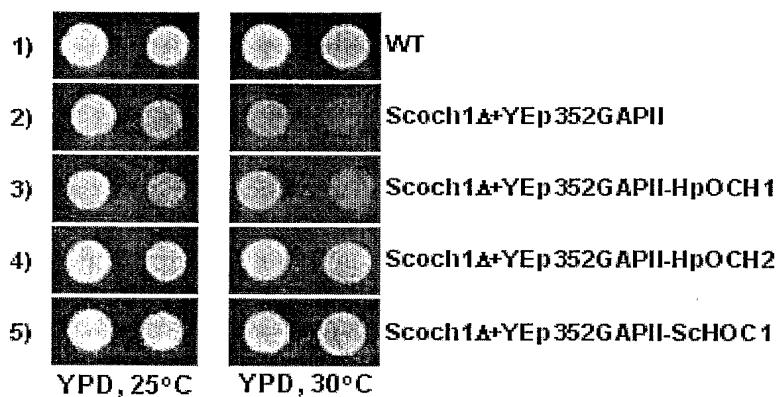
Fig. 5



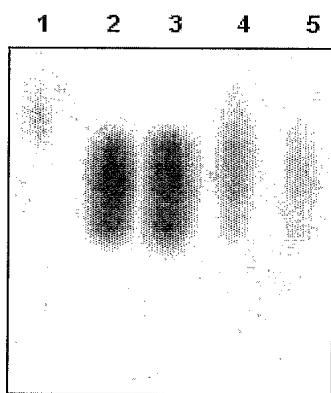
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Fig. 6

A.

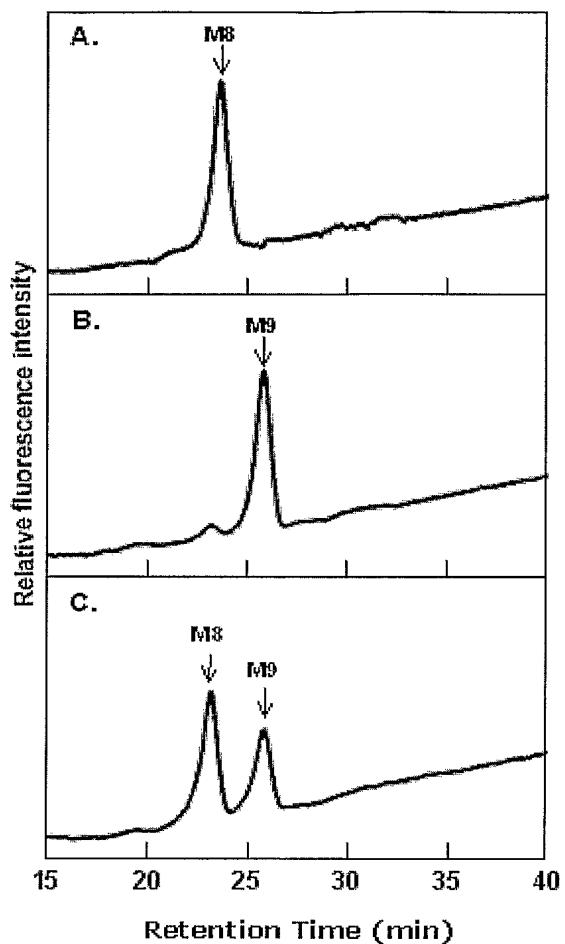


B.



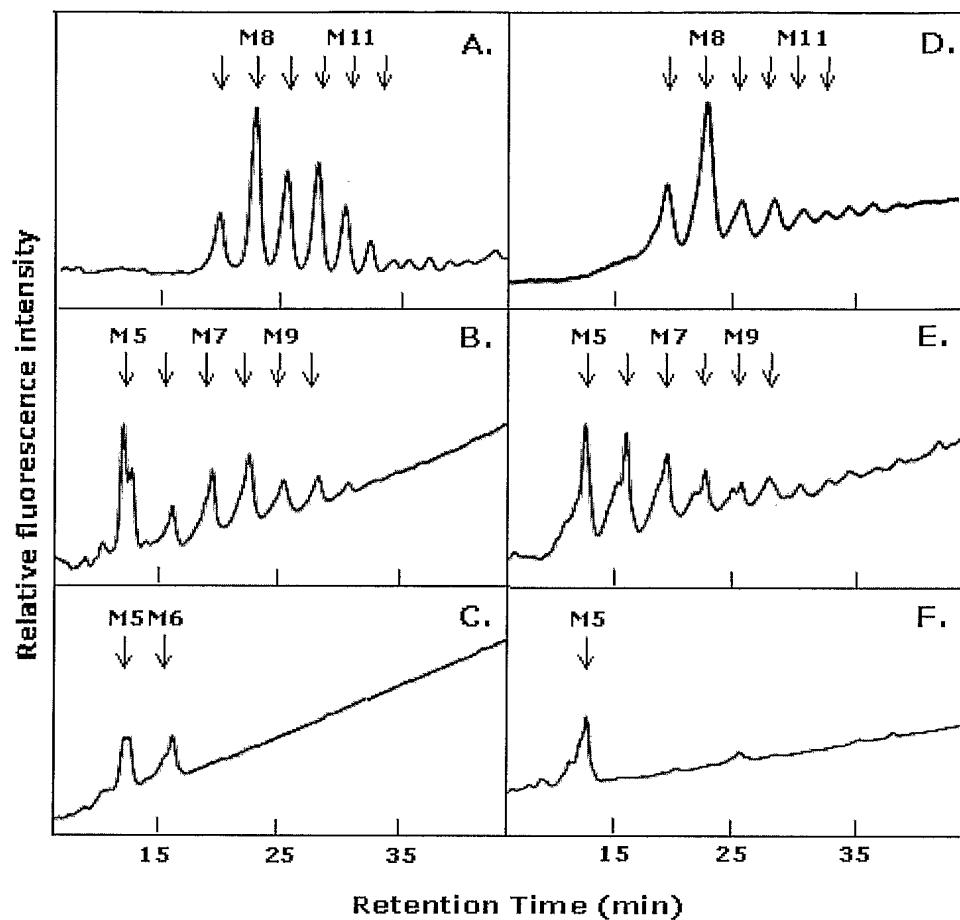
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Fig. 7



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Fig. 8



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Fig. 9

| | ScHochp (396 aa) | Sc0chlp | Hp0chlp | ORF379 | ORF168 | ORF288 | ORF580 | ORF100 | ORF576 |
|----------------------------|----------------------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| ScHochp (396 aa) | | 20 | 21 | 40 | 23 | 18 | 19 | 18 | 17 |
| Sc0chlp (480 aa) | 36 | | 22 | 24 | 37* | 21 | 18 | 17 | 15 |
| Hp0chlp (435 aa) | 36 | 36 | | 19 | 22 | 22 | 32 | 21 | 19 |
| ORF379 (402 aa) | 63 | 40 | 34 | | 28 | 18 | 21 | 17 | 16 |
| ORF168 (428 aa) | 41 | 54* | 39 | 45 | | 21 | 21 | 20 | 17 |
| ORF288 (414 aa) | 35 | 36 | 40 | 34 | 40 | | 21 | 51 | 33 |
| ORF580 (362 aa) | 34 | 36 | 48 | 35 | 39 | 40 | | 20 | 19 |
| ORF100 (425 aa) | 34 | 33 | 37 | 33 | 36 | 66 | 38 | | 32 |
| ORF576 (369 aa) | 30 | 31 | 33 | 30 | 32 | 50 | 33 | 47 | |

Similarity

Identity